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Christian Kropf

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EXAMINER

ROBERTS, LEZAH

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/030,268  
Filing Date: March 19, 2002  
Appellant(s): KROPF ET AL.

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John E. Drach  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed February 15, 2007 appealing from the Office action mailed October 5, 2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

<b>4,933,173</b>	<b>Bristow et al.</b>	<b>6-1990</b>
<b>WO99/20237</b>	<b>Rudin et al.</b>	<b>4-1999</b>

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 16-17, 20-21, 28 and 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over PCT/IB97/01634 to Rudin *et al.* in view of US Patent No. 4,933,173 to Bristow et al.

Rudin *et al.* teach a hydroxyapatite composite comprising finely divided rod like particles of hydroxyapatite having dimensions of 60nm (L) by 15nm (W) by 5nm (T) (see page 2 paragraph 5) and a surfactant (see page 4 paragraph 4 and Example 5 which includes polyethylene glycol) which can be used to prepare toothpastes (see Abstract).

Rudin *et al.* do not teach the incorporation of a protein, protein hydrolyzate or protein hydrolyzate derivative into the composite.

Bristow *et al.* teach an oral preparation for example a toothpaste comprising hydroxyapatite and casein and explain that casein is an anti-caries agent (see col. 1 lines 13-16) and additional proteins such as those from nuts (see col. lines 40-50) and has a high degree of compatibility with hydroxyapatite, which is present in an amount of from 0.01% to 10% (see col. 1 lines 50-55).

One of ordinary skill in the art would have been motivated to combine the above references and as combined teach the claimed invention as claimed. One of ordinary skill in the art would have been motivated to combine the above references because Bristow *et al.* teach that hydroxyapatite and casein are compatible and further that casein has anti-caries properties, both of which are reasons to add casein to a toothpaste and cause one of ordinary skill in the art to expect a better product. Thus, the claimed invention of the composition was within the ordinary skill in the art to make and use at the time it was made and was as a whole, *prima facie* obvious.

#### **(10) Response to Argument**

Appellant asserts the Examiner has not established a *prima facie* case of obviousness and ignores the claim limitation that the claimed composite is "a microscopically heterogeneous aggregate of the nanoparticles associated onto the skeleton of the protein". The Examiner has also failed to consider the invention as a

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whole by ignoring the above quoted limitation. Neither Rudin nor Bristow alone or in combination contain any teaching about a composite material with the properties quoted above.

The Examiner disagrees with Appellant's assertions and takes the position that the hydroxyapatite of the primary reference can be treated with 0.5 to 5 percent by weight collagen, thus forming a composite (bottom of page 21 to top of page 22). Even assuming that the prior art does not explicitly disclose aggregates, it would still be the Examiner's position that the language currently used is so generic as to be met by even a minimal prior art disclosure. Simple agglomeration of the prior art hydroxyapatite particles would form an "aggregate".

Appellant also asserts that there is also no motivation to combine the teachings of Rudin and Bristow, particularly because Bristow teaches away from the instant invention by teaching compositions that are substantially fluorine free. Bristow would have discouraged one of ordinary skill in the art from combining the teachings of Bristow and Rudin.

The Examiner disagrees with Appellant's assertions that Bristow teaches away from the instant invention. Although the reference is teaching alternatives to using fluorine in a dental preparation, it does not discourage one of skill in the art from using fluorine compounds in a dental preparation. The reference does not teach negative effects of fluorine and fluorine compounds are typically used in dental compositions. Furthermore the examples in the disclosure of Rudin do not comprise a fluorine compound. That being said, one of skill in the art would be motivated to use the

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compositions of Bristow with the compositions of Rudin because Rudin does not disclose fluorine as an essential ingredient to its compositions.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Lezah W Roberts/

Examiner, Art Unit 1612

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Lezah Roberts  
Patent Examiner  
Art Unit 1612

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